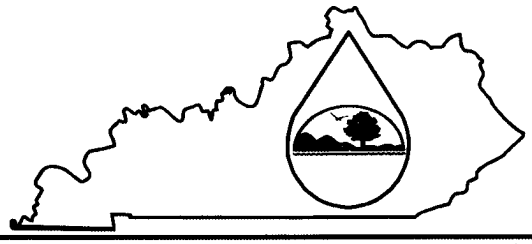
KPDES FORM HQAA



Kentucky Pollutant Discharge Elimination System (KPDES)

High Quality Water Alternative Analysis

The Antidegradation Implementation Procedures outlined in 401 KAR 5:030, Section 1(3)(b)5 allows an applicant who does not accept the effluent limitations required by subparagraphs 2 and 3 of 5:030, Section 1(2)(b) to demonstrate to the satisfaction of the Environmental and Public Protection Cabinet that no technologically or economically feasible alternatives exist and that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water is located. The approval of a POTW's regional facility plan pursuant to 401 KAR 5:006 shall demonstrate compliance with the alternatives analysis and socioeconomic demonstration for a regional facility. This demonstration shall also include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Permit Information

Facility Name:	McCoy Elkhorn Coal Corporation SMCRA Permit No. 898-0818	**KPDES NO.:**	N/A
Address:	1148 Long Fork Road	**County:**	Pike
City, State, Zip Code:	Kimper, KY 41539	**Receiving Water Name:**	Mare Creek and Harmond Branch

II. Alternatives Analysis - For each alternative below, discuss what options were considered and state why these options were not considered feasible.

1. **Discharge to other treatment facilities.** Indicate which treatment works have been considered and provide the reasons why discharge to these works is not feasible.

After an investigation of available treatment facilities, the nearest municipal wastewater treatment plant is located approximately 20 miles away in Prestonsburg, KY. This plant is not adequately equipped to treat this type and/or volume of runoff. Assuming perfect conditions and relatively flat topography a minimum of 105,600 feet of pipe would be required to carry the water to the treatment facility. At a conservative estimated of $60 per linear foot for pipe would make the cost of such an installation to approximately $6,336,000. In addition to the pipeline there would need to be an estimated 5 pumping stations installed at an estimated cost of $150,000 each. This would bring the total project cost to $7,086,000 to install a sewer line and pumping stations for the mine site. This total is absent of any additional costs related to such an installation including, but not limited to engineering, legal, maintenance, upgrades to existing treatment plant to handle the additional volume, and tertiary costs such as excavation, fuel for pumps, etc. Also, a construction project of this type would create additional undesirable discharge.

An alternative would be transporting the water by tanker truck. In order to transport the water by tanker truck, collection of water at the mine site and at the treatment facility would require the construction of pond structures. Approximately 1,480,669 gallons, or 4.56 acre-feet, of water per day is collected at the site. To accommodate this amount of water three additional pond structures constructed at a price of $25,000 each will be needed at both the mine site and treatment facility at a total cost of $150,000. The space needed for these structures at the mine site and at the treatment facility would require additional acres to be permitted, further increasing the overall cost of the project. A conservative estimate of $2 per gallon to upgrade the treatment facility to allow for an increase in daily loads would bring an additional $2,960,000 to the project cost. A total of 370 tanker trucks at a price of $63,000 each will be required to transport the excess water from the average daily precipitation from the mine site to the treatment facility at a total cost of $23,310,000. To contain water onsite and at the treatment facility, including hauling the water, brings the total cost of the water storage project to approximately $26,420,000. This total is absent of any additional costs related to equipment maintenance and fuel costs, driver standby time, and facility road upkeep. Further, public safety on state roads would diminish due to this influx of tanker trucks and from detrimental effects to roadways due to tanker truck payload capacity.

2. **Have use of other discharge locations been evaluated**?
(If yes, then indicate what other discharge locations have been evaluated and the reasons why these locations are not feasible.)

Streams in the vicinity of the mine site that were considered as alternative discharge locations are Stratton Branch, Rockspring Branch, and Buffalo Creek. To move the water to Stratton Branch, approximately 3,500 feet of piping will be required. At an estimate of $60 per linear foot for pipe and $150,000 for installation of an additional pumping station, the cost of such an installation would be approximately $360,000. To move the water to Rockspring Branch, approximately 4,500 feet of piping will be required. At an estimate of $60 per linear foot for pipe and $150,000 for installation of an additional pumping station, the cost of such an installation would be approximately $420,000. To move the water to Buffalo Creek, approximately 4,200 feet of piping will be required. The cost of such an installation, including an additional pumping station, would be approximately $402,000. Levisa Fork, a receiving stream for the discharge associated with the proposed mining operations, is the receiving stream for Johns Creek; which is the receiving stream for Caney Fork; which is the receiving stream for both Stratton Branch and Rockspring Branch. Buffalo Creek is also a tributary to Levisa Fork. All three of the proposed alternative discharge locations discharge into Levisa Fork, the same receiving stream for proposed impacts to Mare Creek and Harmond Branch.

II. Alternatives Analysis - continued

. **Water reuse or recycle.** Provide information about opportunities for water reuse or recycle at this facility. If water reuse or recycle is not a feasible alternative at this facility, please indicate the reasons why.

The affected drainage area for the site is 290.8 acres and produces a daily approximate average of 1,480,669 gallons of water per day to be collected by silt structures (SS's) 1,2,3,4,5,6,7,8,9,10,11,12,13,14 & 15. The only significant re-use of water for this mining operation would be redistribution of water over the site. On-site water redistribution is limited to watering haul roads for dust suppression, hydroseeding for reclamation, and watering of reclaimed areas. Generally, water redistribution of this type is limited to 1,000 gallons/day for each acre disturbed on areas with slopes of 6% or less. With an average slope for the mine site being greater than 6%, and with a possible runoff produced by a 25 year, 24-hour storm in excess of 77,000,000 gallons, redistribution would not be feasible. With a proposed disturbance of 290.8 acres and slopes greater than 6%, approximately 200 gallons/acre, or 58,160 gallons, of runoff could be redistributed on the entire area, leaving an excess of 76,941,840 gallons. Due to the amount of runoff to be contained and the configuration of the mine area, a minimum of 1,000, 75,000 gallon cisterns would be required to contain the excess run-off water. At $65,000 per cistern, the storage portion of the project alone would cost an estimated $65,000,000. The redistribution of a portion of the runoff would also include extensive pumping throughout the mine site, bringing the total cost for the storage and redistribution project to an estimated $66,000,000.

4. **Alternative process or treatment options.** Indicate what process or treatment options have been evaluated and provide the reasons they were not considered feasible.

The underground mining method was considered as an alternative to the surface mining methods proposed. However, using the underground mining method for coal extraction would affect the socio-economic benefits and compromise the water quality assumed in the original permit plans. Additionally, due to the lack of a minimum depth of the coal seams to be mined this alternative was determined to be impracticable. Alternative treatments were considered for the site such as the use of silt fences and straw bales, but were inadequate for the scale of the proposed site. More advanced options were considered, such as a wastewater treatment plant. The cost of upgrading a wastewater treatment plant to treat the estimated quantity of water generated from approximately 35 inches of annual rainfall (approximately 540,444,148 gallons) would be in excess of $1,000,000,000. The cost of plant operation, maintenance, and chemicals required for the treatment process would be in excess of $1,000,000 for the proposed life of the mine site. The total cost of the wastewater treatment plant construction, maintenance, operation, and removal would be in excess of $1,001,000,000.

II. Alternatives Analysis - continued

5. **On-site or subsurface disposal options.** Discuss the potential for on-site or subsurface disposal. If these options are not feasible, then please indicate the reasons why.

Containing the discharge in septic systems was considered for on site storage. Septic systems are not designed to handle water of this type. They are intended to breakdown organic and biodegradable materials. Use of such a system would essentially serve the same purpose as a sediment pond. Of the 540,444,148 gallons of annual rainfall within the site boundaries, only 10 to 15% could be directed into septic systems due to their limited capacities. This alternative would require additional installation of thousands of feet of pipe in forested areas on slopes of 20% or greater. At an estimated cost of $3 per gallon to install an on site septic system unable to handle the total amount of excess water on site, the total cost for such a project would exceed $1,621,332,444. The cost to remove said septic system and restore the land would have an estimated cost of $14,000,000.

The existing abandoned underground mines in the vicinity of the proposed permit area present a high risk level for areas of possible excess water discharge storage. In order to provide a safe alternative for subsurface disposal and/or storage of excess water discharge the abandoned underground mines must provide an impermeable medium. To provide an impermeable medium, the underground mine must have seals in place at each opening or entrance, must be absent from any bedrock fractures to prevent re-entrance into the groundwater and surface water systems, and must have enough storage volume to accommodate potentially 540,444,148 gallons of water annually. The abandoned underground mines in the vicinity of the proposed permit area also pose water quality concerns due to unknown amounts of water and the possibility of compromised quality of water currently being stored by the mine. The many levels of risk associated with injecting excess water discharge from the proposed surface mining operations into abandoned underground mines create a dubious option for water storage.

Injection into underground works or into a septic system would adversely affect the local groundwater supply by displacing any water in the area and creating a superfluous pressure-head. Such an increase in pressure-head will create the possibility for additional discharge from these areas and increase the chances for any blow outs which would ultimately prove to be a safety hazard. The injected water could possibly re-enter the ground water system and potentially the surface water system due to the likelihood of fractured geologic strata associated with the region.

6. **Evaluation of any other alternatives to lowering water quality.** Describe any other alternatives that were evaluated and provide the reasons why these alternatives were not feasible.

Abandoning the project was considered, however this would cause a direct economic loss to households and an indirect loss to nearby communities such as Broad Bottom, Harold, and Justell. The loss of goods and services utilized by the employees of the mining operation will impact all communities in the area. The direct loss of 18 jobs with annual salaries of $62,000 would result in an annual loss of $1,116,000 in salaries with an additional loss of $3,348,000 of spending to local businesses. With approximately 2,005,000 tons of coal reserves to be mined at the project site and assuming a current marketable price of coal at $55/ton, approximately $4,962,375 in taxes will be lost. The costs of complying with more strict water standards could mean the treatment of runoff water. The cost of runoff water treatment varies based on flow rate, acidity, iron levels, and the type of treatment utilized. For a ten year treatment plan the cost could range from $500,000 to $3,000,000 based on 1990 estimates.

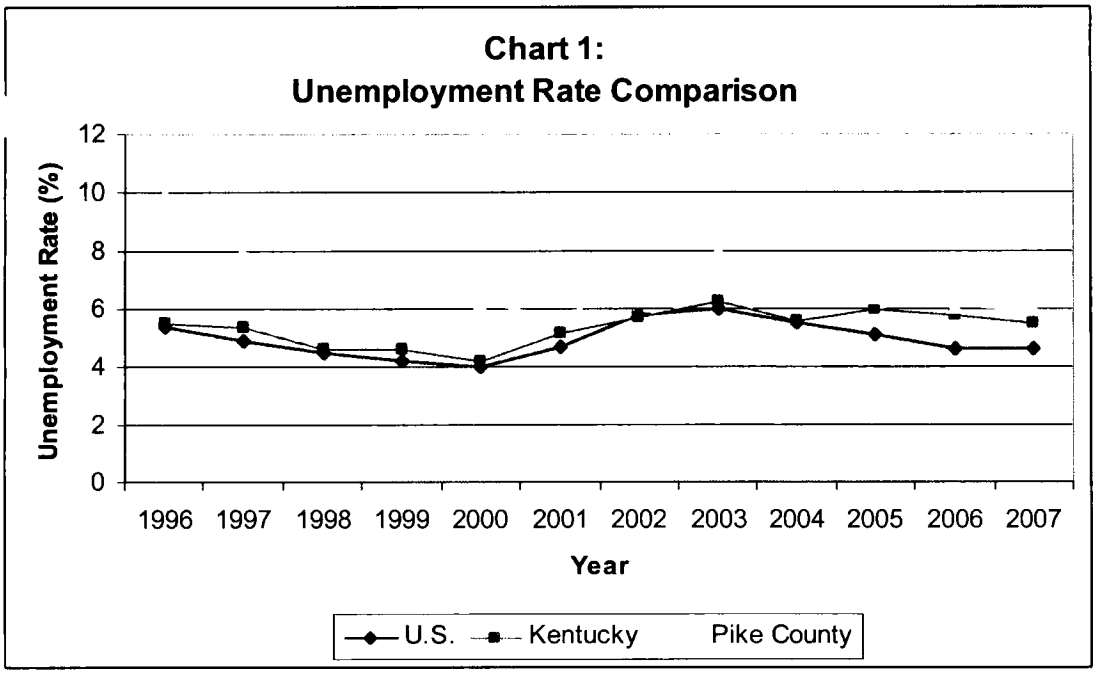
III. Socioeconomic Demonstration

1. State the positive and beneficial effects of this facility on the existing environment or a public health problem.

Existing sources of pollutants consist of previous logging operations which have allowed excess sediment to enter the stream. In 2005, Pike County removed approximately 11,168,000 cubic feet of timber. From 1974 to 2005 timber production in Kentucky rose from approximately 85,000,000 cubic feet to 180,000,000 cubic feet. Additional existing sources of pollution originate from previous mining operations and amount to approximately 917 acres of surface disturbances. Much of the water discharging from the watershed into Mare Creek and Harmond Branch are being negatively impacted by previous logging and mining operations. The permit proposes new ponds to be built along this area to improve the quality of the discharged water. Once mining has been completed the area will be reclaimed to approximate original contour and planted with trees and grasses creating a balanced ecological environment.

2. Describe this facility's effect on the employment of the area

Unemployment in Pike County, according to *Workforce Kentucky, Labor Market Information*, has ranged from 9.9% to 6% from 1996 to 2007. The proposed facility will employ approximately 18 workers, of which 100% will be workers transferred from another location. Of these 18 one can estimate that around 95% will come from the local area. In 2007 there were 25,358 people in the Pike County workforce, of which 1,525 were unemployed, yielding a 6% unemployment rate. Using these figures and assuming a 3:1 ratio of direct to indirect jobs created, the unemployment rate in Pike County would drop to 5% with the issuance of the permit.



3. Describe how this facility will increase or avoid the decrease of area employment.

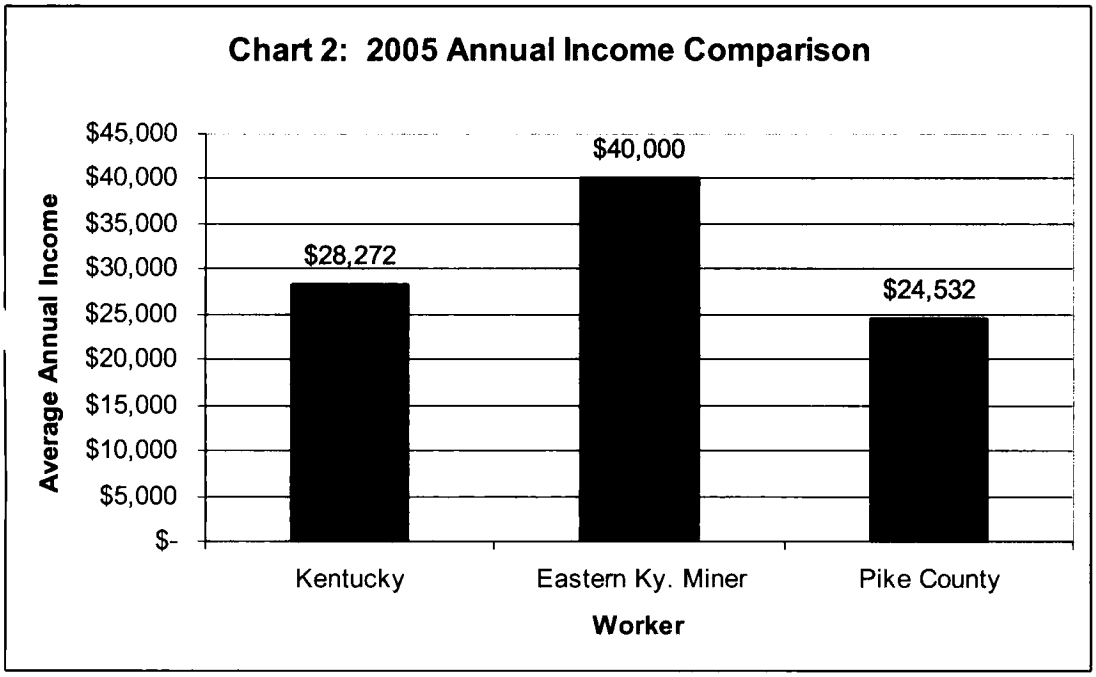
The proposed operation will create approximately 18 new jobs, averaging $62,000 for each McCoy Elkhorn employee; will create approximately $1,116,000 in wages for the new employees. These jobs are permanent in nature and will be a source of sustained income for the employees hired. It is also anticipated that seasonal employees will be added during the summer months and holidays to supplement production lost from employee vacation and personal time. Average wages for all citizens in the Pike County workforce amount to approximately $24,532 according to 2005 estimates. Without this project approximately 22 new jobs (including an assumed 4 jobs available for seasonal employees) and $1,364,000 in wages will be lost for Pike County.

4. Describe the industrial or commercial benefits to the community, including the creation of jobs, the raising of additional revenues, the creation of new or additional tax bases.

The proposed project will create approximately 18 new jobs. It is widely accepted that there exists a 3:1 ratio of direct and indirect jobs created by the Kentucky coal industry. Therefore, one can assume, that in addition to the 18 directly created jobs, there will be an additional 54 jobs created in other fields that provide services to the mining industry. These include but are not limited to engineering services, equipment supply, fuel and lubricant suppliers, and non-mining related suppliers of items such food services, real estate, and education. The current tax rate on coal is 4.5%, of which 50% is returned to the county of origin for public works projects and other community projects. The taxes will equate to approximately $2,481,188 for the county over the life of the mine, assuming $55/ton of coal.

5. Describe any other economic or social benefits to the community.

The average salary for a worker in Pike County was $24,532 for the year 2005. The average salary for a mine worker in Eastern Kentucky was $40,000, a nearly 39% increase over that of the average worker. See Chart 2 below



Other economic and social benefits include improvements to existing roads and the provision of infrastructure services and utilities, including energy and telecommunications.

III. Socioeconomic Demonstration - continued

	Yes	No
6. Will this project be likely to change median household income in the county?	☒	☐
7. Will this project likely change the market value of taxable property in the county?	☒	☐

8. Will this project INCREASE or ~~decrease~~ revenues in the county?	☒	☐
9. Will any public buildings be affected by this system?	☐	☒

10. How many households will be *economically* or *socially* impacted by this project? **72**

11. How will those households be *economically* or *socially* impacted? (For example, through creation of jobs, educational opportunities, or other social or economic benefits.)

The average Eastern Kentucky (current Pike County specific stats were unavailable) mine worker earned $40,000 in 2005. The average McCoy Elkhorn employee will earn $62,000 per year. The company will also provide an attractive benefits package to its employees that will include things such as health insurance, retirement plans, and dental and disability insurance. This will allow for households in the area to improve their living conditions through home improvement, new home construction, better access to medical care, and the creation of generational wealth through company backed savings and retirement plans. Social gains will also be made to the area through educational opportunities created through the increase in household income.

	Yes	No
12. Does this project replace any other methods of sewage treatment to existing facilities? (If so describe how)	☐	☒

	Yes	No
13. Does this project treat any existing sources of pollution more effectively? (If so describe how.)	☒	☐

Existing sources of pollutants consist of previous logging and mining operations which have allowed excess sediment to enter the stream. In 2005, Pike County removed approximately 11,168,000 cubic feet of timber. From 1974 to 2005 timber production in Kentucky rose from approximately 85,000,000 cubic feet to 180,000,000 cubic feet. Previous mining operations have created approximately 917 acres of disturbances within the watersheds of Mare Creek and Harmond Branch directly adjacent to the proposed mining area. The stream banks are also unstable which increases the sediment load in the stream. The proposed activity will include new pond/silt structures that will help reduce the amount of sediment reaching Mare Creek and Harmond Branch.

III. Socioeconomic Demonstration - continued

	Yes	No
14. Does this project eliminate any other sources of discharge or pollutants? (If so describe how.)	☒	☐

SEE ATTACHMENT

15. How will the increase in production levels positively affect the socioeconomic condition of the area?

SEE ATTACHMENT

16. How will the increase in operational efficiency positively affect the socioeconomic condition of the area?

SEE ATTACHMENT

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	Bill Johnson - VP of Engineering	**Telephone No.:**	606.312.9399
Signature:	Bill Johnson	**Date:**	11/5/08

APPENDIX

III. Socioeconomic Demonstration – continued

14. Does this project eliminate any other sources of discharge or pollutants?

The proposed project will eliminate current sources of discharge by decreasing the quantity of sediment entering the stream. The sediment-laden discharge is the result from the previous logging and mining operations within and adjacent to the site. In 2005, Pike County produced approximately 11,168,000 cubic feet of timber. From 1974 to 2005 timber production rose from approximately 85,000,000 cubic feet to 180,000,000 cubic feet. Previous mining operations are a source of sediment discharge in the area and have disturbed approximately 917 acres of land within and adjacent to the permit area. Once mining and reclamation is complete this source will be eliminated as well. On-site trash collection and reclamation initiatives such as replacing topsoil and hydroseeding will help eliminate other sources of discharges or pollutants. Any sediment currently entering the stream will now be diverted through a pond/silt structure proposed for this site therefore eliminating a portion the sediment entering Mare Creek and Harmond Branch. This structure will provide sediment control for these areas until Phase III bond release and the pond/silt structure will be restored at this point.

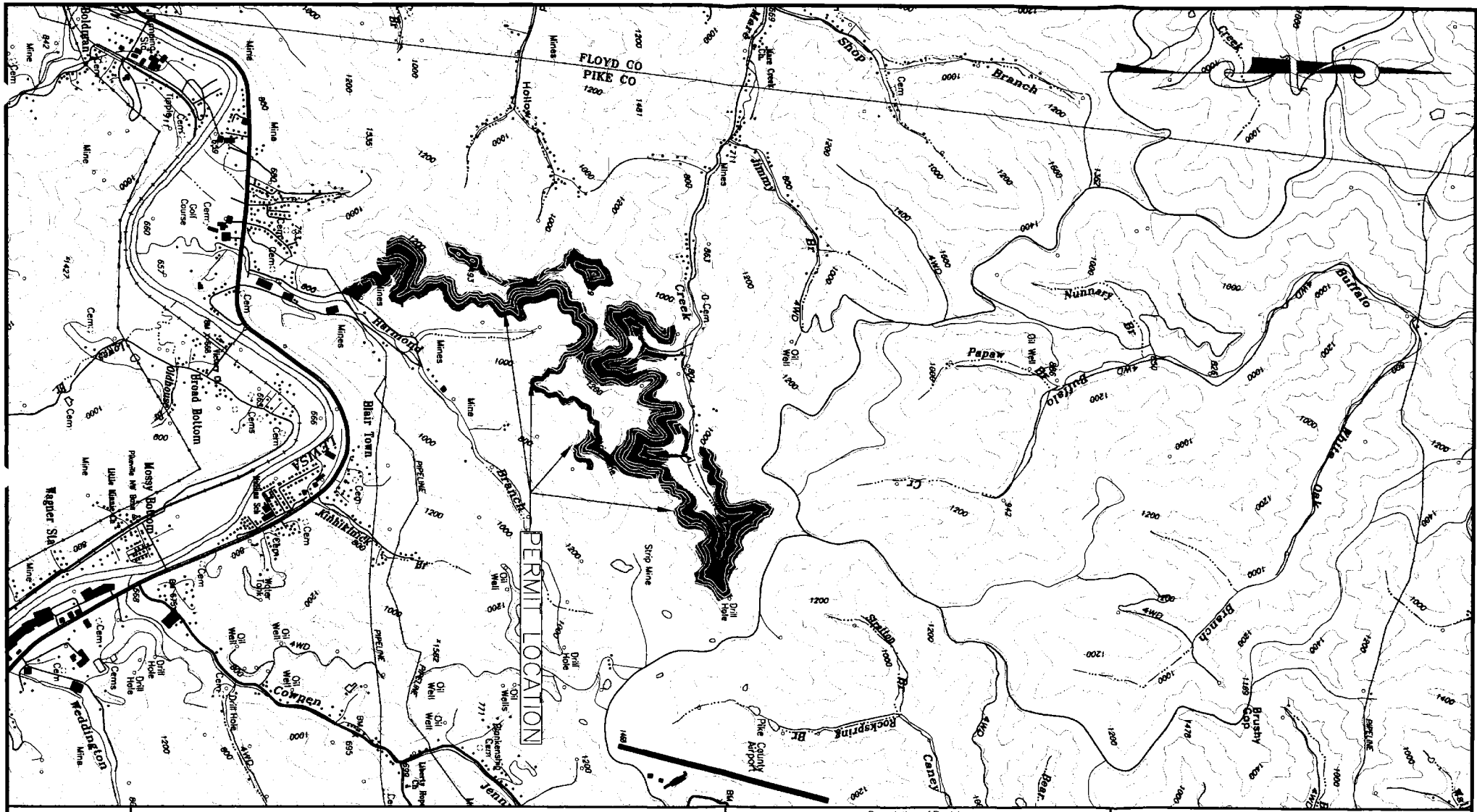
15. How will the increase in production levels positively affect the socioeconomic condition of the area?

The estimated coal production for the proposed project is approximately 2,005,000 tons for the life of the mining operation amounting to approximately $4,962,375 in additional coal severance tax dollars to be used by state and local government entities, assuming $55/ton of coal. As production increases to anticipated demand, so will the required number of employees. A production increase will also lead to higher wages and more severance taxes being paid on the coal and more money being returned to the area. This increase in production will amount to 18 high paying jobs to the area workforce amounting to approximately $1,116,000 per year in wages to the Pike County area. The mining operation will also create additional access roads for future development in areas that could not have previously supported this type of improvement. The possibility of on-bench ponds and the use of the additional access roads provide additional fire control to an area ready for future development.

16. How will the increase in operational efficiency positively affect the socioeconomic condition of the area?

In order to achieve operational efficiency the right combination of people, process, and technology must come together to enhance the productivity of the mining operation, while minimizing the cost of routine operations. Improved operational efficiency allows resources that were previously used for managing

operational tasks to be redirected to new, high value initiatives that bring additional capabilities to the mining operation. What this translates to is higher skilled, higher paid employees that contribute more back to the area through increased taxes, increased discretionary spending, and increased charitable giving. Approximately 72 households will provide or be the recipient of the socioeconomic impacts associated with this mining operation through the creation of 18 new jobs providing approximately $1,116,000 in additional wages for the community.



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Description of Revision			
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Drawing:			

McCoy Elkhorn Coal Corporation

898-0818

Location Map